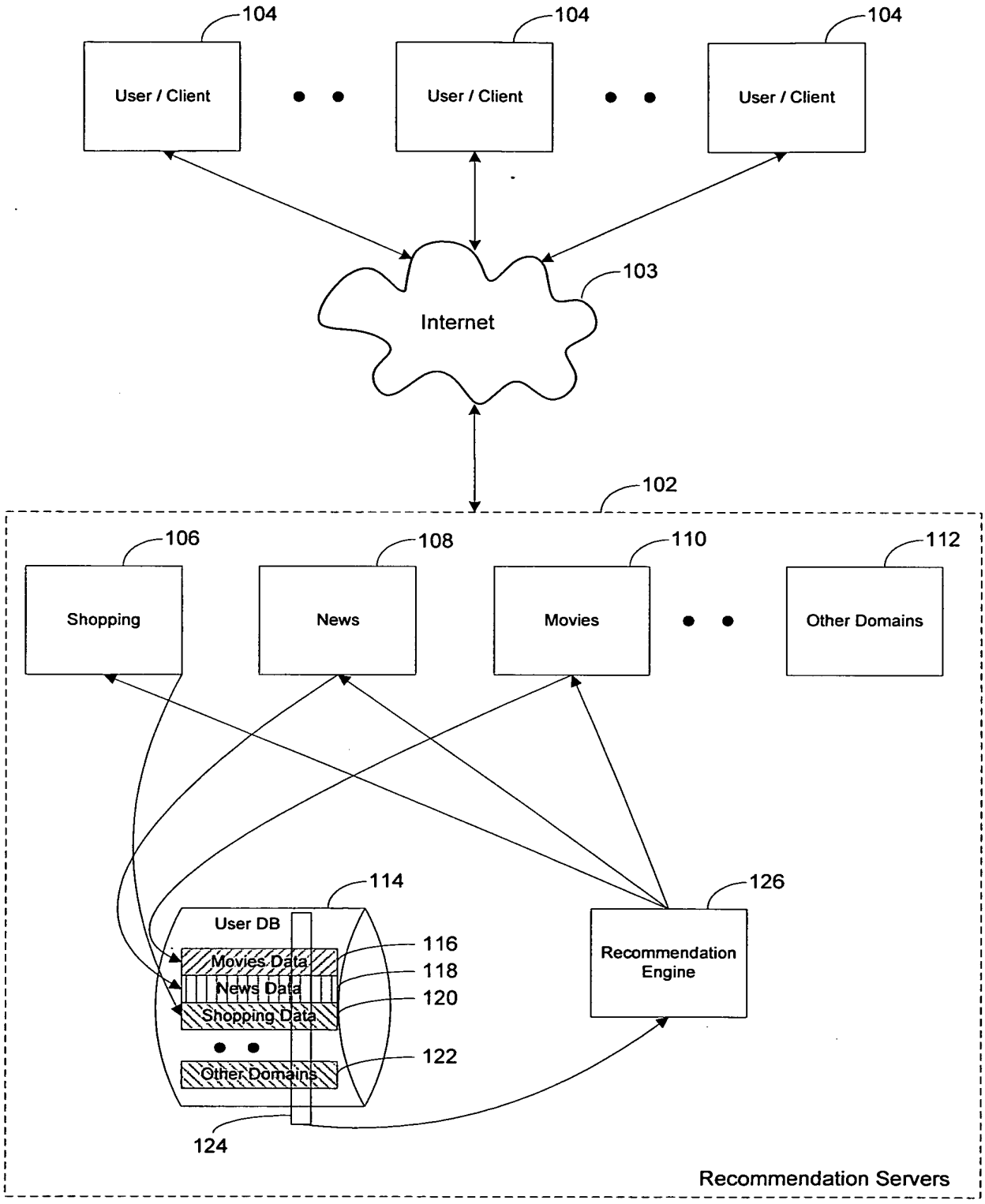
104
User / Client
104
User / Client
104
User / Client
103
Internet
102
106
Shopping
108
News
110
Movies
112
Other Domains
114
User DB
Movies Data
News Data
Shopping Data
Other Domains
116
118
120
122
124
126
Recommendation Engine
Recommendation Servers

FIG. 1

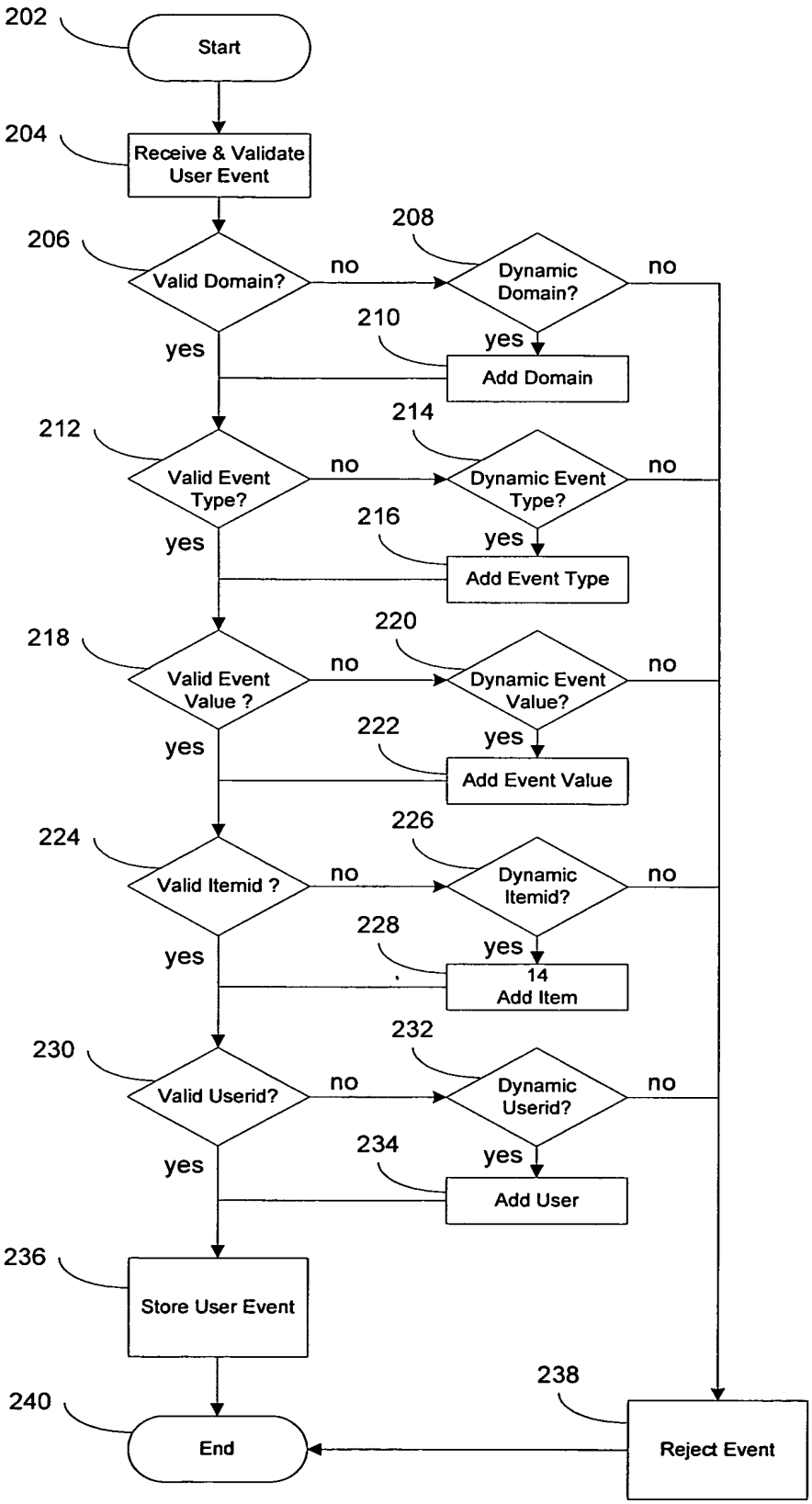
202
Start
204
Receive & Validate User Event
206
Valid Domain?
no
208
Dynamic Domain?
no
yes
210
yes
Add Domain
212
Valid Event Type?
no
214
Dynamic Event Type?
no
yes
216
yes
Add Event Type
218
Valid Event Value ?
no
220
Dynamic Event Value?
no
yes
222
yes
Add Event Value
224
Valid Itemid ?
no
226
Dynamic Itemid?
no
yes
228
yes
14
Add Item
230
Valid Userid?
no
232
Dynamic Userid?
no
yes
234
yes
Add User
236
Store User Event
238
Reject Event
240
End

FIG. 2A

User Database 114

userid	*domain*	*itemid*	*event type*	*event value*
User 1	News	ne84938	view_entire_article	yes
User 1	Movies	mo3844	rate	80
User 1	Movies	mo3844	review	This movie is ...
User 1	Shopping	sh74399	purchase	119
User 1	Shopping	sh74399	rate	high
User 2	⋮	⋮	⋮	⋮
⋮				
User n				

FIG. 2B

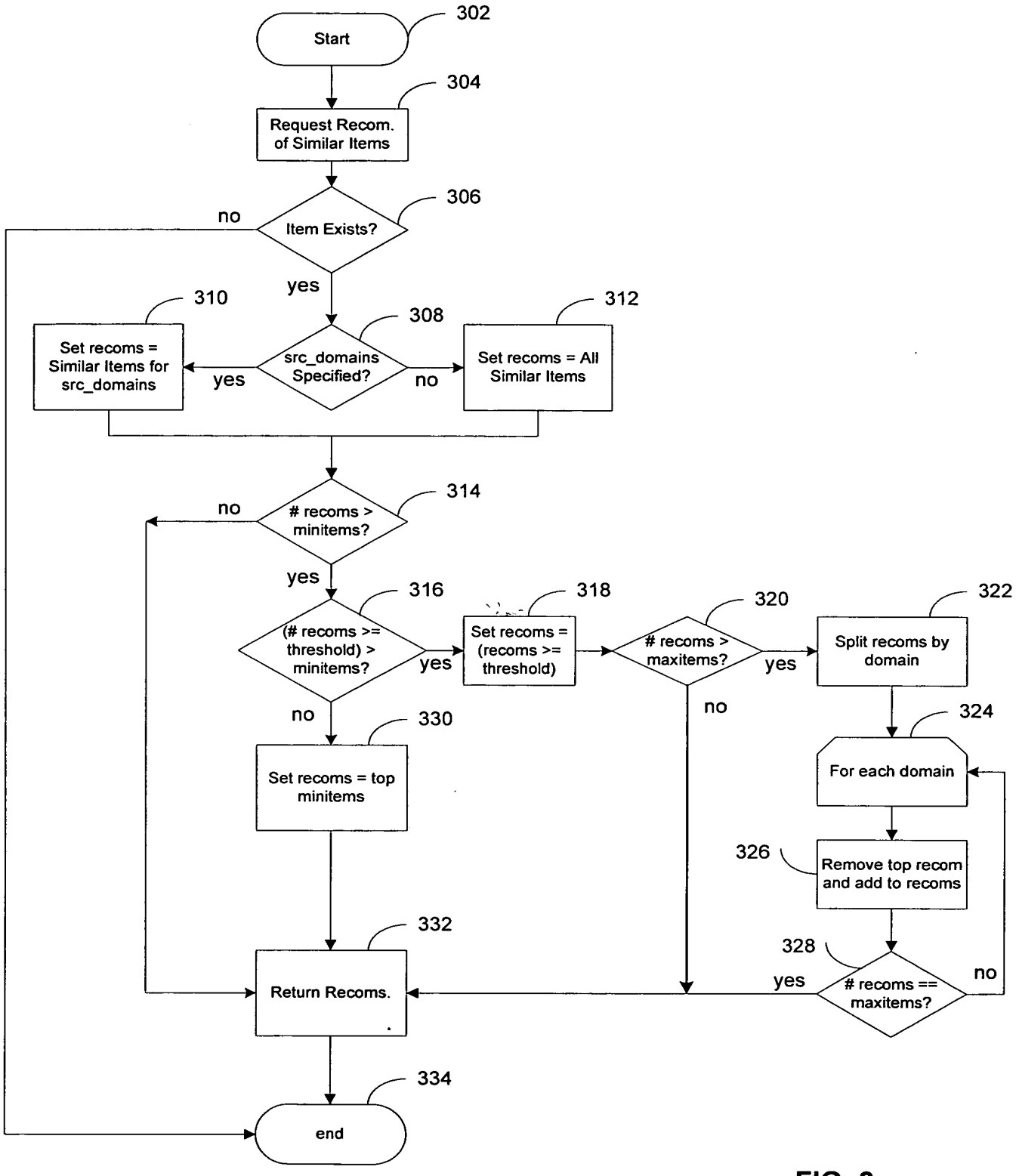
Start
302
Request Recom. of Similar Items
304
Item Exists?
306
no
yes
src_domains Specified?
308
yes
no
Set recoms = Similar Items for src_domains
310
Set recoms = All Similar Items
312
recoms > minitems?
314
no
yes
(# recoms >= threshold) > minitems?
316
yes
no
Set recoms = (recoms >= threshold)
318
recoms > maxitems?
320
yes
no
Split recoms by domain
322
For each domain
324
Remove top recom and add to recoms
326
recoms == maxitems?
328
yes
no
Set recoms = top minitems
330
Return Recoms.
332
end
334

FIG. 3

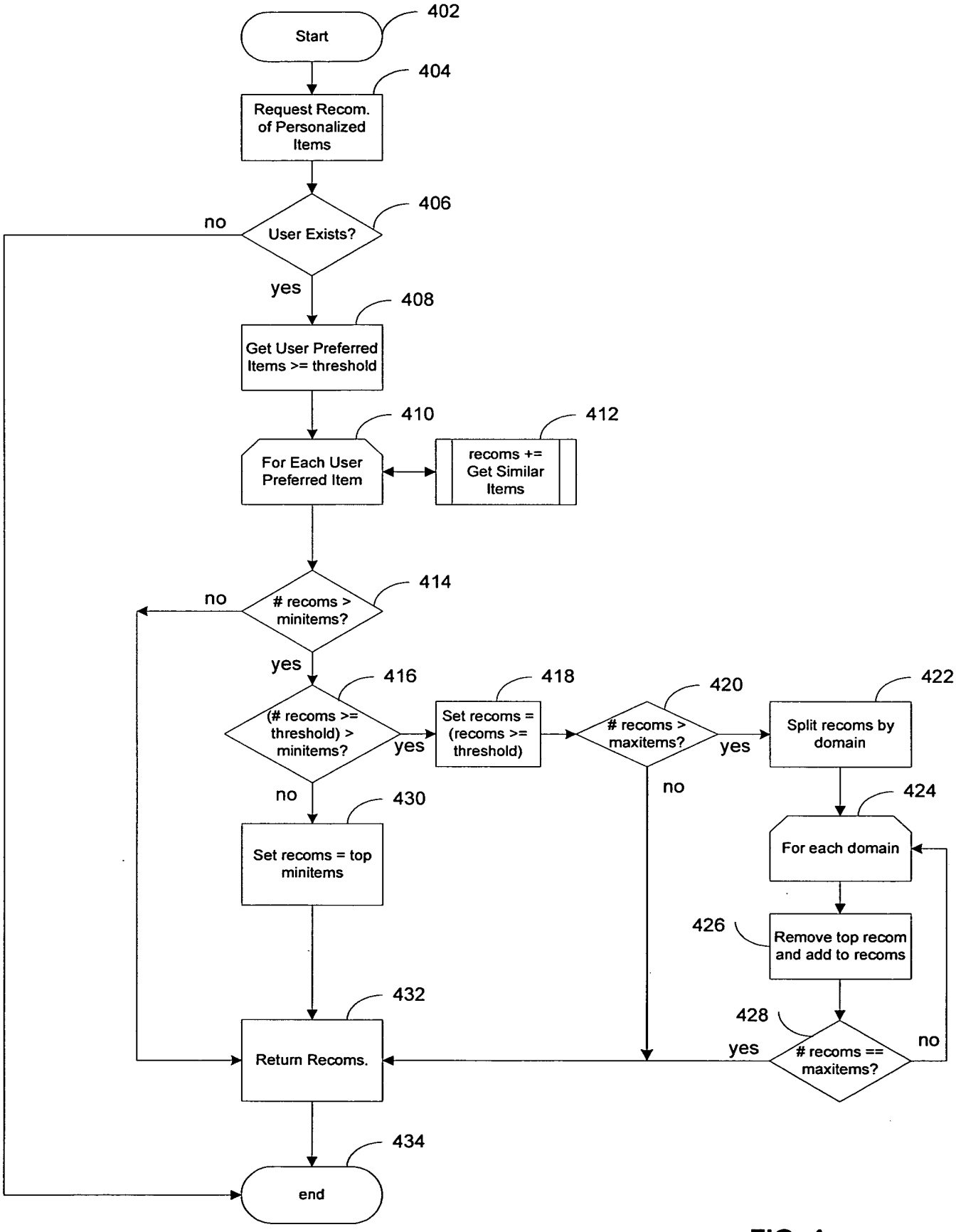
Start
402
Request Recom. of Personalized Items
404
User Exists?
406
no
yes
Get User Preferred Items >= threshold
408
For Each User Preferred Item
410
recoms += Get Similar Items
412
recoms > minitems?
414
no
yes
(# recoms >= threshold) > minitems?
416
yes
no
Set recoms = (recoms >= threshold)
418
recoms > maxitems?
420
yes
no
Split recoms by domain
422
For each domain
424
Remove top recom and add to recoms
426
recoms == maxitems?
428
yes
no
Set recoms = top minitems
430
Return Recoms.
432
end
434

FIG. 4